WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005TX194B

Title: Determining the Efficacy of Biological Control of Saltcedar (Tamarix spp.) on the Colorado River of Texas

Project Type: Research

Focus Categories: Ecology, Surface Water, Invasive Species

Keywords: Colorado River, CRMWD, saltcedar, biological control

Start Date: 03/01/2005

End Date: 02/28/2006

Federal Funds: $4,870

Non-Federal Matching Funds: $13,163

Congressional District: 17th

Principal Investigators:
Jeremy L. Hudgeons
Texas A&M University

Allen E. Knutson

Abstract

The invasion of saltcedar, along with prolonged drought and other factors, has stressed water supplies throughout the Upper Colorado watershed of Texas to the extent that reservoirs are now at 11% or less of capacity. This study will evaluate the extent to which a leaf beetle (Diorhabda elongata) will feed on saltcedar and provide a biological weapon to control this nuisance plant and reduce the water saltcedar wastefully uses, thus potentially increasing water supplies. The theory behind this project is that the leaf beetle may decrease the stored carbohydrates available for re-growth of saltcedar trees. The project will include field studies in an isolated strand of saltcedar on Lake Thomas, a man-made reservoir in the region. Mating pairs of leaf beetles will be placed in cages at the site, and both the life cycle of the insects and the effects on adjacent saltcedar stands will be evaluated. Movement of the beetles will be tracked with a global positioning system data logger and findings will be plotted with a geographic information system. This study will provide useful insights into the extent to which the use of biological controls may effectively limit and/or remove salt cedar from Texas lakes, thus freeing up

more water for beneficial uses. The project complements several other programs at Texas A&M that use integrated pest management for ecological purposes.